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ABSTRACT

A study investigated whether or not second language (L2) learners who are exposed to naturalistic and/or mixed contexts (i.e., living and studying the language where it is the dominant language in use) appropriate nonverbal forms of communication, and specifically whether gestures are reconceptualized in the L2. Subjects were two intermediate-level university students of English as a Second Language (ESL); data on one Taiwanese student are reported. The data were gathered over eight weeks in videotape recordings of the student in conversation with a graduate assistant. Beginning with the fourth conversation session, the student developed a reliance on use of iconic gestures to facilitate conversation, apparently as a form of object-regulation and also as other-regulation. The issue of whether the native speaker was also appropriating gestures from the learner to facilitate conversation also emerged. Results are discussed in the context of recent research on nonverbal communication and second language learning. (Contains 14 references.) (MSE)

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A Longitudinal Study of the Appropriation of Gestures of the Abstract by L2 Learning

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A LONGITUDINAL STUDY OF THE APPROPRIATION OF GESTURES OF THE ABSTRACT BY L2 LEARNERS

Steven G. McCafferty

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Introduction

Nonverbal elements have been considered important to second language concerns for a long time. However, most of the research in the area has focused on testing. As yet, there has been little interest in the acquisition, or appropriation of nonverbal forms by learners. It seems likely that this inattention is at least in part due to the perspective of language as a disembodied set of linguistic rules as inherited from the study of formal linguistics.

We of course realize that in face to face interactions that the use of nonverbal expression is an important dimension (some researchers suggest that communication is actually largely conveyed nonverbally). However, it is also true that even when others are not present such as on the telephone or when talking to an object, for example a computer, that we continue to use nonverbal forms. Moreover, in the process of writing or when involved in some other reflective activity we also at times gesture to ourselves. With this in mind, it needs to be brought out that language is not just a set of linguistic rules, that it is embodied.

From this perspective, an interesting question with regard to the study of second language acquisition and specifically in relation to language learning contexts is whether or not learners who are exposed to naturalistic and/or mixed

contexts (living and or studying the language where it is the dominant language in use) appropriate nonverbal forms. The specific concern of the present study is to investigate this process over time, that is longitudinally, and in relation to forms of gestures of the abstract.

Within a Vygotskian perspective - the theoretical framework for this study - speech and thought are intertwined, and as speech and gesture are known to arise together in ontogenesis it would seem likely that gestures, thinking, and speech are also intertwined. As such, gestures would seem tied to the first language interpersonally and thus intrapersonally as well. If indeed gestures do change from L1 forms to L2 forms there is also the possibility of reconceptualiztion, that the experience of becoming bilingual/bicultural is of a cognitively transformative nature.

According to the Vygotskian approach to the appropriation of intellectual powers, children are deeply dependent on their sociocultural and sociohistorical contexts, and in particular on semiotic means of mediating the world in and around them. Thus people develop cognitively largely through the use of language in interacting with parents and other members of their communities within such institutions as schools and religious organizations, as well as of course by participating in the everyday activities that surround them.

Eventually the ways of thinking that are a part of these contexts are appropriated by the child at an intrapsychological level. This is not to say, however, that once in this position the child/adult manifests complete control over all levels of participation within the society, as of course, there is an ongoing need to interact with others in order to know. As such, the individual is never apart from his or her social contexts: it is always present both inter- and intrapsychologically.

This can be demonstrated, for example, by paying conscious attention to the

voice, or voices, inside our head. It should be clear to anyone who does so just how intractable this feature of consciousness is, and just how much a reflection it is of the sociohistorical world outside of our head.

Given that this is the case, certainly an interesting question in relation to L2 learning is to what extent this voice changes, and to what extent this leads toward a reconceptualiztion of the world, particularly when the learner is exposed to an L2 in naturalistic contexts.

None of the L2 private speech studies has tried to specifically investigate this question; however, in general the studies that have been done indicate that learners do not usually resort to their L1 in trying to solve problems in the L2, but that they do so at times, and perhaps when they feel most challenged. It also appears, however, that in some cultures people may not express their thinking using overt forms of speech, instead possibly engaging in L1 inner speech during pauses they take when engaged in verbal problem-solving in the L2 (Appel, 1986).

In an article that addresses the relationship between inner speech and L2 acquisition, Ushakova (1994) argues the importance of the L1 in "establishing inner speech mechanisms" that then serve to guide the L2 learning process. In her words, this process is one of "plugging the newly established structures into the ones worked out earlier, as well as employing already existing verbal skills" (p. 155). In this model, the primary role of inner speech in the L1, that is, inner self development, no longer applies, instead these same mechanisms are turned toward the goal of language learning. Grabois (1996), however, points to "methodological problems" with this study, bringing some of these claims into question.

Also, although not dealing with private or inner speech, Pavlenko, (1996), found that Russian speakers of English living in the U.S. used American metaphors of privacy to describe various situations in a silent film in English, despite the lack

of such metaphors in Russian.

This does not of course address whether or not these learners had also augmented their inner speech, but it does provide evidence for reconceptualization. Therefore, the question of inner speech being transformed is still in doubt, and before turning to the role that gesture may have in illuminating this question it is first important to establish the relationship between thinking, speaking, and gesturing.

Vygotsky himself gave gesture a critical role in the development of language, noting that intentionality develops out of indicatory gestures in conjunction with a child's first words, and indeed that "The word, at first, is a conventional substitute for the gesture: it appears long before the child's crucial 'discovery of language' and before he is capable of logical operations" (Vygotsky, 1986, p. 65). This of course indicates that gestures are where the child first comes into contact in a meaningful way with semiotic mediation.

David McNeill, as found in his book on the subject, Hand and Mind (1992), has particularly concentrated on how thought, gesture, and language are interrelated at the intrapersonal level. McNeill contends that speech and gesture are "dialectically" engaged - gesture providing imagery and speech the verbal, or linguistic structure to thought (p. 245). Furthermore, McNeill describes gestures as "synthetic", representing a compilation of elements, and as such he suggests, following Vygotsky, that they tend to reveal a speaker's psychological predicate, that is to say, that they reval what to the speaker is the most important aspect of what is being said. For example, with the sentence, "she nailed it" a gesture of the arm and hand moving from shoulder height down to the waist brings out the most salient point of the utterance in the speaker's mind (how "completely" it was "nailed"). In further support of this claim, McNeill provides evidence, again from his own work, which shows that when gesture is explicitly prohibited in narrative settings where

there is an interlocutor that speech becomes more complex (1992, p. 283).

A good deal of interest has been generated with regard to L2 gestures, although in fact most of this work has concentrated on the need to test this dimension and/or suggestions for doing so (e.g., Al-shabbi, 1993; Bachman, 1990, 1991; Canale and Swain, 1980; Kellerman, 1992; Neu, 1990). Additionally, there have been attempts to study L2 learners' comprehension of gestures. However to date, little work has been done on whether or not learners not only comprehend but also appropriate, or acquire nonverbal elements.

In one study that does examine acquisition, in the current volume of *Applied Linguistics* (vol. 19, no. 1, 1998), I found that Japanese learners even with relatively brief periods of exposure to American culture produced forms of the "I don't know"/uncertainty gesture (arms spread outward from the body, palms up), although this is not a Japanese gesture. The fact that this form was found in conjunction with L2 private speech, that is, at an intrapsychological level, provides support for the possibility that learners not only appropriate L2 gestures, but that their use is tied to conceptualizing in the L2.

Also, in a second study, that will come out as part of a volume on Sociocultural Theory and L2 learning being edited by James P. Lantolf for Oxford University Press, Mohammed Ahmed and I found that Japanese immigrants who had come to North America as adults, and who largely learned English through naturalistic exposure, showed evidence of having acquired gestures of the abstract. Particularly, these participants used a one-handed bounded container gesture that other Japanese in the study from instruction-only contexts and L1 contexts did not. Also, the extent to which the naturalistic learners had appropriated the nonverbal presentation of self as represented by the monolingual Americans proved to be quite striking (although this is not to suggest the complete absence of Japanese nonverbal

characteristics). Although it was not the purpose of the study to determine if any of these elements could be considered transformative in the sense of indicating changes in the perception or conceptualization of self cross-culturally, such a transformation, again, does seem a possibility. It is also important to point out that these participants were interacting with other Japanese with similar backgrounds - albeit in English - yet still they did so nonverbally in a manner in many ways different from their shared cultural origins.

Study

Participants

The study originally involved four participants. However, two of them had to be eliminated. Both of the remaining participants were intermediate level ESL students from the same class and had never been to the U.S. before coming to Las Vegas to study at UNLV. One was from Taiwan in his early twenties and the other was from Korea and in his late twenties. Both had been in the U.S. for a period of 4 weeks before recording began. At this stage of the data analysis, I want to report on the gestures of only the participant from Taiwan.

Data collection

Originally, it was hoped that the participants would be able to be studied over a period of three months or longer. However, both decided to go back to their countries at the end of the semester and not to return. Therefore, the participant from Taiwan, whom I will call L, was recorded over an 8 week period.

Most of the video recordings were done while the participant sat on a bench in a small park-like area not far from his ESL classroom. At most of these secessions, John, a graduate assistant, chatted with L, asking him about his life in Las

Vegas, the places he had visited since arriving, etc. Basically, he tried to introduce topics of interest, and being an experienced ESL/EFL instructor, he was aware of how to facilitate conversation. Although John knew the research had something to do with gestures, this was not a topic he was familiar with, nor were any of the specifics ever discussed with him.

Results

The Process of Appropriation

The principle focus of the study was to examine the appropriation of nonverbal forms, to see if, in particular, there would be a change in the use of gestures of the abstract over time. However, as it turned out, the process of appropriation itself became perhaps the most interesting dimension of the study.

In the fourth recording secession, a significant event took place. During this secession, the research assistant, John, guessed what the lexical item that L's conversational partner - also a student from Taiwan - was struggling with through his use of an iconic gesture for the word "statue". Although this did not appear to have any effect on L at the time, he did observe this use of gesture.

The fifth week of recording is the first time L interacted solely with John, a pattern that continued for the rest of the recordings. After setting up the camera, John took a seat on the bench and began to engage L about various topics. Almost immediately, L started to rely on the use of iconic gestures to help him convey vocabulary items in the same way he had witnessed his conversational partner doing the week before. However in this case, he was not searching for a word but rather illustrating what he was saying, gesturally. This pattern continued for quite some time at the beginning of the recording. A bit later in the secession, a second interesting event occurred: John pointed over his shoulder with his thumb in an abstract deictic gesture, referring to "last weekend". Immediately, L repeated both

the phrase and the gesture. Also, at one point John gesturally illustrated the phrase "until now", after realizing that L was unfamiliar with its meaning. This involved a metaphoric gesture: John held his left hand palm down at the level of his chin and slowly brought the back of his right hand up from a stomach-level position until it touched the palm of his left hand.

In the sixth week the use of gesture to illustrate or enact lexical meaning was more pronounced by both L and John than in the previous week. The topic of what L's girlfriend was studying proved difficult for L to convey. During this episode L basically illustrated every word he could gesturally. There was also an interesting addition to the process of appropriation as John used a gesture that L had used in previous weeks: he held his right hand out in front of him palm down about three feet from the ground when referring to "young children". This is an iconic representation of the height of a young child to indicate age. Also, this gesture was repeated by John a second time, and used by L as well during this secession. Another gesture, also of the abstract variety, was used by both participants: one hand was held at chest level the palm down to signify "down" in the metaphorical sense of "keeping the price down". This gesture was used in conjunction with the word "discount" by both speakers.

Much of the same took place in the seventh recording. Of particular interest: at one point L used a two-handed, unbounded container gesture with the word "plan" as in "the plan for the university buildings on campus". However he was unsure if he had used the word correctly. John responded by modeling a similar sentence and repeated the gesture as well. This gesture was later used again by John with the utterance "the whole, the whole thing". Shortly after that the gesture was again used by L, this time in conjunction with the word "all".

The patterns described above continued in the final week of recording as well.

Container gestures

As noted above, the principal reason for doing this study was to see if changes in gestures of the abstract, and especially container gestures, would be found over the course of recording. McNeill (1992), and in a subsequent personal communication, expressed the notion that the Chinese use a palms down form of this gesture that is also unbounded in character. Therefore, I was interested to see if L, over the eight weeks he was recorded, would manifest bounded palms-up forms typical of the American use of this gesture.

Recordings for weeks 3 through 5 found L using mostly the expected Chinese form of this gesture. There were instances of the Western form, however, its use was limited to listing two local scenic spots in sessions 3 and 4, and expanded in week 5 to include a reference to "forests" when talking about a trip to Yosemite National Park.

There was quite a dramatic change from this pattern for recording 6 when Mr. Lee used palms up gestures for "art therapy", "problems", "drawing", "people", "old men", "information", "Taiwan" and "advice". This was both an increase in the frequency of use of this form, and an extension in terms of representing abstract as well as concrete meaning. Also of interest is that sometimes the two different forms of gesture were found in immediate sequence as in "I want to ask somebody their advice" where "somebody" was said with a palm-down gesture and "advice" with a palm-up form.

In both recordings 7 and 8 there was little use of the bounded gesture form. Although L used many container gestures in session 7, only two were of a palms up variety and none of the container gestures in recording 8 were bounded, although there were very few container gestures found in this recording, overall.

Beats

Beats are, for example, the up and down movement of a hand or tapping of the foot. McNeill (1992) explains their basic function by comparing them to highlighting words in a written text. The use of a beat provides an emphasis that makes the chosen word(s) stand apart from the rest of the text. Beats often accompany other gesture types as well. In a further treatment, McNeill et al. (1993) indicate that a beat can also function metapragmatically, that it "indexes the word or phrase it accompanies as being significant not purely for it semantic content, but also for its discourse-pragmatic content"

Over the eight weeks of recording there was a steady reduction in the use of one specific form of beat. This primarily involved the use of one or both hands in a shaky or wavy manner. This gesture accompanied virtually every other form of gesture in the third recording, but by the seventh it was almost completely absent

Discussion/conclusion

L's reliance on the use of iconic gestures to facilitate his conversation with John is of interest from a Vygotskian point of view as it appears to be a form of object-regulation in the sense that there is an externalization of the language structure. However, at the same time, it is clear that he is doing this perhaps in large part for the benefit of the listener so that John might better comprehend what is being said. In fact, L specifically refers to his gesture at one point as if it is a known feature of their conversation, which is of course it is. This would then seem to be a form of other-regulation at the same time. In any case, the presumption must be that were L self-regulated in the conversation, many of these gestures would not appear.

Interestingly, the use of gestures for enactment is also found in childhood. McNeill (1992) found that children age 2 and a half when narrating the events of a

cartoon they had just seen, used iconic gestures in much the same way as L. Thus, as with the re-emergence of private speech, there may be a connection with ways of understanding developed during childhood that are instituted later when faced with challenging L2 related tasks.

As to the appropriation of specific gestures used within the conversation by both participants: within the Sociocultural Framework, this kind of accommodation promotes a shared psychological space, or intersubjectivity. Indeed this might be expected in these circumstances, with one of the conversational participants being an ESL student and the other an ESL teacher even though the focus for both is supposedly L's use of language. Certainly this finding begs the question to what extent teachers appropriate the use of L2 learners' gestures to facilitate conversation in other than ESL or foreign language contexts. There is good evidence for this in relation to gesture development in children in the L1, von Rafler-Engel (1980) citing a number of examples from her own research where children and the adults they interact with are clearly sensitive to the use of specific gestures.

The use of palms-up forms of container gestures seems to be under development for L, who basically only used them in the sixth recording where the use of this gesture is very much like that of monolingual Americans. Perhaps given more time and exposure to conducive contexts, a regular pattern of use for bounded containers would develop.

The dropping off of the wavy form of beats by the participant is notable in the sense that it shows a stronger movement away from Chinese to American forms of gesture. Of course why this happened is not known, but in speculating, this is not a typical American form of beat; moreover, it may be marked as more of a feminine form in that culture as well.

Given findings for the appropriation of nonverbal communication in childhood, the reappearance of this process within the contexts of L2 learning

should perhaps not be that surprising. However, whether this process is also cognitively transformative as with first language development, that is, whether it leads to a reconceptualization seems unclear still. If, for example Ushakova's model of L2 inner speech is adopted for the use of gesture, then the new gestures are simply being "plugged into" the the old ones. However, on the other hand, if the use of different nonverbal forms also leads to a difference in the conception of self, for example, then the the nature of interpersonal communication would also perhaps be different. In this case the experience would then be transformative. There are those whose experience would lead them to believe that this is the more accurate of the two positions.

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